THE CLAIMS:

1. An empty pallet stacking unit having a pallet loading and stacking end and a stacked pallet discharge end, the pallet stacking unit comprising a pallet hopper dimensioned to form and accommodate a stack of empty pallets and reversibly moveable from a pallet loading and stacking position to a stacked pallet discharging position, the pallet hopper having a forward edge oriented toward the pallet discharge end of the pallet stacking unit, the pallet hopper being pivotally linked to a fixed support through a 4-bar linkage.

2. The pallet stacking unit of Claim 1 wherein the 4-bar linkage provides a compound motion of the pallet hopper, said motion being characterized by a nearly vertical movement of the forward edge of the pallet hopper as the pallet hopper transitions from the pallet loading and stacking position to the stacked pallet discharging position.

3. The pallet stacking unit of Claim 1 wherein the pallet hopper is of substantially L-shaped configuration and in its pallet loading and stacking position is oriented at a slight downward incline relative to the horizontal.

4. The pallet stacking unit of Claim 1 wherein the 4-bar linkage possesses a first pair of bars disposed on one side of the pallet hopper and a second pair of bars symmetrically disposed on the other side of the pallet hopper, each of the 4 bars being pivotally linked at one of its ends to a pivot point on a fixed support and at the other of its ends to a pivot point on the pallet hopper.

5. The pallet stacking unit of Claim 4 wherein the distances between consecutive pivot points on each side of the pallet hopper are substantially equal.

6. The pallet stacking unit of Claim 1 wherein the pallet hopper possesses at least one flow track to facilitate discharge of stacked pallets from the pallet hopper when the pallet hopper is in the stacked pallet discharging position.

7. The pallet stacking unit of Claim 6 wherein the pallet hopper in its stacked pallet discharging position is oriented at a slight downward incline relative to the horizontal.

8. The pallet stacking unit of Claim 1 including means for locking the pallet hopper in the pallet loading and stacking position.

9. The pallet stacking unit of Claim 1 including means for dampening the movement of the pallet hopper.

10. The pallet stacking unit of Claim 9 wherein the means of dampening the movement of the pallet hopper is at least one gas spring pivotally connected at one of its ends to the fixed support and pivotally connected at the other of its ends to the pallet hopper.

11. A pallet stacking and staging system comprising:

a) an empty pallet stacking unit having a pallet loading and stacking end and a stacked pallet discharge end, the pallet stacking unit comprising a pallet hopper dimensioned to form and accommodate a stack of empty pallets and reversibly moveable from a pallet loading and stacking position to a stacked pallet discharging position; and,

b) a stacked pallet staging unit having a stacked pallet receiving end, a stacked pallet removal end and a staging bay therebetween dimensioned to receive and retain a stack of pallets, the stacked pallet receiving end of the stacked pallet staging unit being cooperatively coupled to the stacked pallet discharge end of the empty pallet

stacking unit such that when the pallet hopper of the empty pallet stacking unit is in the pallet stack discharging position, the stacked pallets will be discharged from the hopper into the stacked pallet staging bay of the stacked pallet staging unit and be retained in the staging bay until their removal therefrom.

12. The pallet stacking and staging system of Claim 11 wherein the pallet hopper has a forward edge oriented toward the discharge end of the pallet stacking unit, the pallet hopper being pivotally linked to a fixed support through a 4-bar linkage.

13. The pallet stacking and staging system of Claim 12 wherein in the pallet stacking unit, the 4-bar linkage provides a compound motion of the pallet hopper, said motion being characterized by a nearly vertical movement of the forward edge of the pallet hopper as the pallet hopper transitions from the pallet loading and stacking position to the stacked pallet discharging position.

14. The pallet stacking and staging system of Claim 12 wherein in the pallet stacking unit, the 4-bar linkage possesses a first pair of bars disposed on one side of the pallet hopper and a second pair of bars symmetrically disposed on the other side of the pallet hopper, each of the 4 bars being pivotally linked at one of its ends to a pivot point on a fixed support and at the other of its ends to a pivot point on the pallet hopper.

15. The pallet stacking and staging system of Claim 14 wherein in the pallet stacking unit, the distances between consecutive pivot points on each side of the pallet hopper are substantially equal.

16. The pallet stacking and staging system of Claim 12 wherein in the pallet staging unit, the pallet hopper is of substantially L-shaped configuration and in its pallet

loading and stacking position is oriented at a slight downward incline relative to the horizontal.

17. The pallet stacking and staging system of Claim 12 wherein in the pallet staging unit, the pallet hopper possesses at least one flow track to facilitate discharge of stacked pallets from the pallet hopper when the pallet hopper is in the stacked pallet discharging position.

18. The pallet stacking and staging system of Claim 17 wherein in the pallet staging unit, the pallet hopper in its stacked pallet discharging position is oriented at a slight downward incline relative to the horizontal.

19. The pallet stacking and staging system of Claim 12 wherein the pallet stacking unit includes means for locking the pallet hopper in the pallet loading and stacking position.

20. The pallet stacking and staging system of Claim 12 wherein the pallet stacking unit includes means for dampening the movement of the pallet hopper.

21. The pallet stacking and staging system of Claim 20 wherein the means for dampening the movement of the pallet hopper is at least one gas spring pivotally connected at one of its ends to the fixed support and pivotally connected at the other of its ends to the pallet hopper.

22. The pallet stacking and staging system of Claim 18 wherein the stacked pallet staging unit includes a fixed support, at least one flow track and a gate both pivotally connected to the fixed support at a common pivot point positioned at one end of the fixed support, means for raising and lowering the flow track and tilting the gate about

their common pivot point and means for closing and opening the gate coordinately with the raising and lowering, respectively, of the flow track.

23. The pallet stacking and staging system of Claim 22 wherein the means for raising the flow track and tilting the gate about their common pivot point is a lever, the lever being actuated by the weight of the pallet hopper bearing against the lever when the pallet hopper is in the stacked pallet discharging position.

24. The pallet stacking and staging system of Claim 23 wherein in the stacked pallet staging unit, the gate includes a gate-supporting assembly, a pair of gate members supported by the gate-supporting assembly and pivotable about their major axes from a gate-closed position which retains the stacked pallets within the staging bay and a gate-open position which permits removal of the stacked pallets from the staging bay unit, and the means for opening and closing the gate includes a pivotable crank pivotally connected to the fixed support, a lifting bar connecting the crank to a flow track, a rod pivotally connected at one end to the crank and pivotally connected at its opposite end to a gate member.

25. The pallet stacking and staging system of Claim 24 wherein in the pallet staging unit, the height of each gate member is approximately that of the tallest stack of pallets that can be accommodated within the staging bay.

26. A stacked pallet staging unit having a stacked pallet receiving end, a stacked pallet removal end and a staging area therebetween dimensioned to receive and retain a stack of pallets, the stacked pallet staging unit comprising a fixed support, at least one flow track and a gate both pivotally connected to the fixed support at a common pivot point positioned at one end of the fixed support, means for raising and lowering the flow

track and tilting the gate about their common pivot point and means for closing and opening the gate coordinately with the raising and lowering, respectively, of the flow track.

27. The stacked pallet staging unit of Claim 26 wherein the means for raising the flow track and tilting the gate about their common pivot point is a lever.

28. The stacked pallet staging unit of Claim 27 wherein the gate includes a gate-supporting assembly, a pair of gate members supported by the gate-supporting assembly and pivotable about their major axes from a gate-closed position which retains the stacked pallets within the staging bay unit and a gate-open position which permits removal of the stacked pallets from the staging bay, and the means for opening and closing the gate includes a pivotable crank pivotally connected to the fixed support, a lifting bar connecting the crank to a flow track, a rod pivotally connected at one end to the crank and pivotally connected at its opposite end to a gate member.

29. The stacked pallet staging unit of Claim 28 wherein the height of each gate member is approximately that of the tallest stack of pallets that can be accommodated within the staging bay.